Water Quality in the July Creek Watershed

Complaint Investigation 010291

FPB/IRC/67

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The Investigation

Background

The July Creek watershed, west of Grand Forks, contains both domestic and irrigation water licences. Soil samples from watersheds in the Grand Forks area have high levels of arsenic. Residents of the watershed are concerned that there could be health risks if harvesting activities cause sediment to enter July Creek or cause leaching of arsenic from soils to contaminate groundwater and wells.

The July Creek Ratepayers Association (the complainant) expressed its concerns about arsenic to the Ministry of Forests (MOF) Boundary Forest District at a meeting in 1998. The district manager ordered a watershed assessment for July Creek. A representative of the association participated on a watershed advisory committee that oversaw the watershed assessment. The assessment was completed in November 1999, and did not identify any significant hydrological concerns for the proposed cutblocks or road-building within the assessment area.

Pope and Talbot Ltd.'s (the licensee) 1999 forest development plan (FDP) was approved shortly after, in December 1999. However, cutblocks planned within the July Creek watershed were changed from category A (for approval) status to category I (for information only) status prior to the plan approval because the watershed assessment was not available during the review and comment period.

Although the watershed assessment did not predict significant problems, residents remained concerned about their water supply. On November 24, 1999, the complainant sent a letter to the ministers of Forests, Energy and Mines, Environment, Lands and Parks, and Health, requesting support for a moratorium on logging in the July Creek watershed. The MOF deputy minister responded on behalf of all the ministries on February 3, 2000. He did not grant the request for a moratorium. The district manager asked a multi-agency working group to advise him on whether there was any evidence of a link between harvesting and arsenic in the water. As part of the group, the Ministry of Environment, Lands and Parks (now the Ministry of Water, Land and Air Protection) committed to conduct water sampling to develop a baseline of information. The sampling took place in the summer and fall of 2000, but the analysis and report were not completed until 2001.

In April 2000, the licensee submitted an amendment to the 1999 FDP to include the July Creek cutblocks for approval. In October 2000, the district manager approved the amendment. The July Creek Ratepayers Association filed a complaint with the Board, asserting that the amendment should not have been approved because the work of the multi-agency group was not completed. The complainant believes that the water sampling was crucial, and it was not reasonable to approve the plan before this information was available.

The complainant is also concerned that increased runoff resulting from the logging of one cutblock approved in the amendment will destabilize a slope above private land. There are signs of unstable terrain in the area.

Relevant Legislation

Section 41: *Forest Practices Code of British Columbia Act*, approvals of operational plans

Section 14: *Operational Planning Regulation*, requirement for a watershed assessment

Section 17: *Operational Planning Regulation*, requirement for terrain stability field assessment

Issues

The investigation is focused on three issues:

- whether it was appropriate for the district manager to be satisfied that the plan would adequately manage and conserve the water resource;
- whether the approval process for the FDP amendment was fair, specific to the working group activities; and
- whether terrain stability was adequately addressed for the slope identified by the complainant.

Discussion

Was it appropriate for the district manager to be satisfied that the plan would adequately manage and conserve the water resource?

The July Creek watershed is not a community watershed, so a watershed assessment was not mandatory under the *Forest Practices Code of British Columbia Act* and regulations (the Code). It became a requirement under section 14 of the *Operational Planning Regulation* (OPR) when the district manager required that the licensee and the MOF small business forest enterprise program complete an assessment.

The watershed assessment determined that there had been a low level of hydrologic impact from forest harvesting in the July Creek watershed. The assessment also determined that the proposed harvesting did not place July Creek at additional hydrologic risk. Harvesting could affect arsenic levels in July Creek if it caused soil sediment to reach the stream. However, the assessment found that there was a low risk of sediment resulting from the proposed cutblocks and road-building. The MOF hydrologists advised the district manager that they supported the conclusions of the assessment.

The watershed assessment reported that domestic water samples taken in 1999 contained arsenic within the acceptable level. The watershed assessment also referred to arsenic in relation to a mine tailings pond spill that occurred in 1967 near the headwaters of July Creek. There was concern that a tailings pond failure could impact July Creek. During the watershed assessment process a hydrologist determined that the tailings pond did not drain into July Creek. The

complainant did not agree, but this was not an issue in this complaint and it was not investigated. The licensee did not propose any cutblocks above the tailings pond, so the FDP amendment does not increase the risk of a tailings pond failure.

Several recommendations were made in the watershed assessment report. Most of these were fairly site-specific recommendations and would likely not affect approvals at the FDP level. There were also two recommendations to research information about a mine tailings pond spill and background levels of water quality.

The complainant asserted that the harvesting could alter the water table and lead to surface well contamination. The complainant is concerned that lower water flows could increase the acidity of groundwater and thereby increase the uptake of arsenic from the soil. The watershed assessment did not discuss this directly, but it did state that there should be no decrease in water levels during the drier parts of the year.

In response to a debate at a November 1, 1999, meeting of the watershed advisory committee, the regional hydrologist proposed a one-year deferral of harvesting in the July Creek watershed while more information was gathered. This was voted on and defeated at the meeting. The complainant believed it was significant that the hydrologist proposed this. However, the hydrologist commented that it was only proposed as a way to resolve the debate in the short term. Ultimately, a delay in harvesting did occur for a longer period, as the cutblocks were not approved until October 2000. The silviculture prescriptions were approved in the fall of 2001. Harvesting is planned for late 2002.

A multi-agency working group made up of staff from MOF, MELP, Ministry of Energy and Mines (MEM), the regional health board and the Ministry of Transportation and Highways was formed to draft the forest minister's response to the complainant's November 1999 letter. The group reviewed the watershed assessment. A question-and-answer document prepared by the group states that, at the time, no health concerns had been shown to exist in the area as a result of arsenic in the water and soil. The working group concluded that the limited data on July Creek did not indicate a health risk. MOF had previously requested that MELP undertake a study to complete some spot measurement and background-level sampling to determine if a real safety concern exists. The working group decided that water sampling should be initiated because of the limited data available.

MELP staff conducted the recommended water sampling in July Creek in the summer and fall of 2000. Analysis of samples and the subsequent reporting was not completed until September 2001. The purpose of the sampling, described in the MELP report, was to describe arsenic and other metal levels in water, fish and sediments of July Creek. The report described arsenic levels found at all sites sampled in July Creek to be well below those acceptable by drinking-water standards.

The working group found no scientific references linking forest development with arsenic levels in stream water. MOF hydrology experts said they had conducted a search of the Internet and scientific literature for information and had consulted with water quality experts in MELP. They did not find a relation between harvesting and arsenic in water. It was acknowledged that there

might be a problem if severe soil disturbance occurred where high levels of arsenic existed in the soil, and if the soils were exposed to greater amounts of water than in the past, but this was believed to be highly unlikely to occur.

MEM provided MELP with soil sample information. MELP reviewed this and existing water sample information for July Creek and other creeks in the area, and concluded the overall risk of arsenic appearing in surface water was low. This assessment was sent to the Ministry of Health and the regional health office. The regional health office then sent a health risk statement to the MOF district manager, which said, "The arsenic data that was sent to us does not appear to have any implications for human exposure. Without human exposure to arsenic in drinking water the risk of arsenic related health effects couldn't be determined."

The regional health office could not make a link with a health risk because of the lack of human exposure. The available data provided no indication of how much arsenic a person would drink, and so no health risk could be determined. The statement was inconclusive.

After receiving the health risk statement, the district manager approved the FDP amendment.

Section 41 of the Act requires the district manager to approve a plan if it complies with the Code and he is satisfied that it will adequately manage and conserve forest resources. The district manager said he considered:

- the watershed assessment recommendations;
- that the watershed assessment recommendations had been addressed;
- that experts had found no link between harvesting and arsenic in water; and
- that the licensee made the plan available for additional public review.

The district manager said there was nothing that he saw that would prevent him from approving the plan.

Although the water sampling was not yet completed, the district manager had the results of the watershed assessment indicating that harvesting should not elevate the arsenic levels by introducing sediment into July Creek and the expert advice that harvesting would pose a low risk to water quality. The Board finds that it was appropriate for the district manager to be satisfied that the amendment would adequately manage and conserve the water resource.

Was the approval process for the FDP amendment fair?

The Code provides for public input into the forest development planning process by requiring licensees to provide the public with an opportunity to review and comment on an FDP or amendment to an FDP. There are no other legislated requirements for public input. Section 27(8) of the OPR states that an opportunity for review for an interested party will only be adequate if the district manager is of the opinion that the opportunity was commensurate with the nature and extent of the person's interest in the area. Therefore, the district manager may require additional opportunities for input. In the circumstances of this complaint, the

complainant had an additional opportunity for input into the planning process by participating on the watershed advisory committee.

In a letter dated November 29, 1999, the district manager advised the complainant that the amendment would be made available for review and comment and that the opportunity would be advertised in the local paper. The complainant was invited to request a meeting to discuss concerns. The FDP amendment was made available for public review and comment for a sixty-day period ending February 14, 2000. The complainant did not submit any comments on the amendment and did not request a meeting with the district manager.

In a letter dated February 3, 2000, the MOF deputy minister informed the complainant that a working group would be considering the existing information and that water sampling was planned in order to monitor water quality. The deputy minister stated that logging would go ahead while sampling was carried out, but that the question of logging and its impacts on arsenic levels could be re-evaluated based on the sampling results.

Following the approval of the FDP amendment in October 2000, the district manager wrote to the complainant, advising of his decision and providing his rationale for that decision.

The complainant believed that it should been involved in the working group activity. The working group was informal, created in response to the complainant's concerns. Its purpose was to obtain expert opinions. This was not a Code activity, such as the watershed advisory committee or the review and comment process for FDPs, where the public and water users can be involved. There was no requirement to involve the complainant in that work and the district manager would not normally be expected to include the public when seeking expert opinion from staff or other agencies.

In summary, the complainant had additional opportunities beyond those available to the general public for input into the planning process through participation on the watershed advisory committee, and through a specific invitation from the district manager to meet. The Code requirements for providing a review and comment opportunity were met. The watershed assessment and the information-gathering by the ministries were initiated in response to the complainant's concerns, demonstrating that the concerns were considered. These were not required by the Code. The deputy minister's letter advised the complainant about the working group activities. That same letter also advised that the review opportunity was ending and that harvesting would not be delayed pending completion of the water sampling. The district manager advised the complainant in writing of his approval of the FDP amendment, with an explanation of his rationale. The approval process for the FDP amendment was fair.

Was terrain stability adequately addressed?

Several residences within the July Creek watershed are located in the East Danshin area above Highway 3 and below a flat area that is the proposed site of cutblock 285-1. To access the cutblock, the licensee had proposed approximately three kilometres of road above the residential area, a combination of new construction and upgrading of existing road. The proposal for the cutblock is to selectively harvest seven hectares within a total cutblock size of 20 hectares. The complainant is concerned that runoff from the cutblock will destabilize the

slope immediately below. There are visible indicators of instability further down slope below Highway 3, on the banks of July Creek.

Terrain-stability mapping was conducted for the area in 1998. The slope below cutblock 285-1 was not classified as either unstable or potentially unstable. Areas of soil and surface material movement (mass wasting) observed below Highway 3 were identified as potentially unstable. The 1999 watershed assessment found that the proposed cutblocks were well away from unstable terrain and there was a low mass wasting hazard within the July Creek watershed as a whole, and specifically for cutblock 285-1.

Section 17 of the *Operational Planning Regulation* requires a more detailed terrain stability field assessment if the area is identified in the FDP as having:

- a high likelihood of landslides;
- unstable terrain; or
- a slope gradient greater than 60 percent.

None of these criteria apply to the area immediately below cutblock 285-1, so there was no Code requirement for further assessment.

The licensee had a professional engineer conduct a terrain-stability field assessment for the access road to cutblock 285-1. The Board reviewed the assessment and found it to be consistent with the methodology recommended by the Code. The assessment included the road location and proposed construction methods. The engineer concluded that the road location was appropriate. The landslide-hazard rating for the proposed road was low. The assessment noted an area of potentially unstable terrain below the access road. It stated that potential but unlikely landslides occurring on steep sections below the road could extend to developed areas, and had a high consequence rating for damage to human life and property. However, the assessment found there was a low potential that the road construction, as prescribed, would increase the existing likelihood of a landslide in this area. There was also a low hazard rating for sediment production and delivery to streams.

The professional engineer recommended that road construction should avoid concentrating surface discharge onto steep slopes below the road. To achieve this, the engineer recommended using an outsloped road surface, rather than conventional ditches and cross-drainage, for a portion of the road. Other than this, there were no areas of specialized construction required.

The Board finds that the assessment of terrain stability was adequate. It used an appropriate methodology and met the Code requirements.

Conclusions

The Board concludes that it was appropriate for the district manager to be satisfied that the amendment would adequately manage and conserve the water resource.

The approval process was fair. The complainant was provided with additional opportunities for input, its concerns resulted in additional processes to gather information and opinions, and it was advised in writing of the decision and the reasons for the decision.

The terrain-stability assessment of the slope below cutblock 285-1 was adequate. It used an appropriate methodology and met the requirements of the Code.

The Board also notes that the government met its commitment to collect background data on arsenic in the water.

Recommendations

In accordance with section 185 of the *Forest Practices Code of British Columbia Act*, the Board makes the following recommendation.

The water sampling that was conducted in 2000 provided a benchmark for water quality in July Creek. Additional sampling following harvesting of the proposed cutblocks may alleviate many of the residents' concerns, even though it likely would not provide a causal link to any changes that might be observed.

The Board recommends that the Kamloops region of the Ministry of Water, Land and Air Protection continue with a program to monitor the levels of arsenic in July Creek.

In accordance with section 186 of the Act, the Board requests that the Kamloops region of the Ministry of Water, Land and Air Protection inform the Board of its response to this recommendation by September 30, 2002.